**3GPP TSG-SA WG4 Meeting #118e *S4-220mmm***

**Electronic Meeting, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **Pseudo CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.346** | **CR** |  | **rev** | **-** | **Current version:** | **17.x.x** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **x** |

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|  | | | | | | | | | | |
| ***Title:*** | [5MBP3]: Feature reduced FLUTE FDT Schema | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBP3 | | | | |  | ***Date:*** | | | 31.3.2022 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | A new FLUTE FDT Scheme is provided, which only contains features according to the FLUTE Profile from Annex L.4. A new heading is inserted in Clause 7.3.2 to make the hanging paragraph referencable. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\*\* First Change \*\*\*\*

## Agreement from offline

1: Avoid Copying, work with reference

2: extend 26.346, adding a terminology mapping sections, this is ffs

3: extend 26.346, adding a new 2022 FDT schema, which removes all the profiled out elements (Annex L.4) from the schema

4: 26.517 should reference 26.346, offering a fully backward compatible solution, and this new schema.

5: 26.517 may need to define a new SDP line for MBS Service Type.

6: SDP & QOS, hmmm

7: Similar “referencing” for Packet Distribution

### 7.3.2 SDP Parameters for MBMS download session

#### 7.3.2.0 General

The semantics of a Session Description of an MBMS download session includes the following parameters:

- The sender IP address.

- The number of channels in the session.

- The destination IP address and port number for each channel in the session per media.

- The Transport Session Identifier (TSI) of the session.

- The start time and end time of the session.

- The protocol ID (i.e. FLUTE/UDP).

- Media type(s) and fmt-list.

- Data rate using existing SDP bandwidth modifiers.

- Mode of MBMS bearer per media.

- FEC capabilities and related parameters.

- Service-language(s) per media.

- QoE Metrics (as defined in sub-clauses 8.3.2.1 and 8.4).

- Alternative TMGI

This list includes the parameters required by FLUTE - RFC 3926 [9]

These shall be expressed in SDP ( [14] and [15]) syntax according to the following clauses.

## L.6 Profiled FLUTE FDT Schema

Editor’s Note: A new schema is defined, removing some of the un-used features and making the FDT file smaller.

This specification defines two XML Schema elements necessary for the UE and the network side to maintain forward and backward compatibility: *schemaVersion* and *delimiter*.

In this version of the specification the network shall set the *schemaVersion* element, defined as a child of *FDT-Instance* element, to 1.

The schema *version* attribute (part of the schema instruction) shall be included in the UE schema and the network schema.

Note: The value of the *schemaVersion* element and *version* attribute is intended to be increased by 1 in every future releases where new element(s) or attribute(s) are added.

When an MBS Client receives an instantiation of an FDT compliant to this schema, it shall determine the schema version required to parse the instantiation as follows:

- If the MBS Client supports one or more versions of the FDT schema with the schema *version* attribute, then it shall use the schema that has the highest schema *version* attribute value that is equal to or less than the value in the received *schemaVersion* element;

- The *delimiter* element shall be set by the network to a value of 0, and the element content shall be ignored by the MBS Client.

The following is the FDT schema, and name as FLUTE-FDT-3GPP-Main.xsd

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema

xmlns="urn:IETF:metadata:2022:FLUTE:FDT"

xmlns:fl="urn:IETF:metadata:2022:FLUTE:FDT"

xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="urn:IETF:metadata:2022:FLUTE:FDT"

elementFormDefault="qualified"

version="1">

<xs:element name="FDT-Instance" type="FDT-InstanceType"/>

<xs:complexType name="FDT-InstanceType">

<xs:sequence>

<xs:element name="File" type="FileType" maxOccurs="unbounded"/>

<xs:element ref="schemaVersion"/>

<xs:element ref="delimiter"/>

<xs:any namespace="##other" processContents="skip" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

<xs:attribute name="Expires" type="xs:string" use="required"/>

<xs:attribute name="Complete" type="xs:boolean" use="optional"/>

<xs:attribute name="Content-Type" type="xs:string" use="optional"/>

<xs:attribute name="Content-Encoding" type="xs:string" use="optional"/>

<xs:attribute name="FEC-OTI-FEC-Encoding-ID" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-FEC-Instance-ID" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Maximum-Source-Block-Length" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Encoding-Symbol-Length" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Max-Number-of-Encoding-Symbols" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Scheme-Specific-Info" type="xs:base64Binary" use="optional"/>

<xs:anyAttribute processContents="skip"/>

</xs:complexType>

<xs:complexType name="FileType">

<xs:sequence>

<xs:element ref="Cache-Control" minOccurs="0"/>

<xs:element ref="delimiter"/>

<xs:any namespace="##other" processContents="skip" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

<xs:attribute name="Content-Location" type="xs:anyURI" use="required"/>

<xs:attribute name="TOI" type="xs:positiveInteger" use="required"/>

<xs:attribute name="Content-Length" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="Transfer-Length" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="Content-Type" type="xs:string" use="optional"/>

<xs:attribute name="Content-Encoding" type="xs:string" use="optional"/>

<xs:attribute name="Content-MD5" type="xs:base64Binary" use="optional"/>

<xs:attribute name="FEC-OTI-FEC-Encoding-ID" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-FEC-Instance-ID" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Maximum-Source-Block-Length" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Encoding-Symbol-Length" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Max-Number-of-Encoding-Symbols" type="xs:unsignedLong" use="optional"/>

<xs:attribute name="FEC-OTI-Scheme-Specific-Info" type="xs:base64Binary" use="optional"/>

<xs:attribute name="FEC-Redundancy-Level" type="xs:unsignedInt" use="optional"/>

<xs:attribute name="File-ETag" type="xs:string" use="optional"/>

<xs:anyAttribute processContents="skip"/>

</xs:complexType>

<xs:element name="Cache-Control">

<xs:complexType>

<xs:choice>

<xs:element name="no-cache" type="xs:boolean" fixed="true"/>

<xs:element name="max-stale" type="xs:boolean" fixed="true"/>

<xs:element name="Expires" type="xs:unsignedInt"/>

</xs:choice>

<xs:anyAttribute processContents="skip"/>

</xs:complexType>

<xs:element name="schemaVersion" type="xs:unsignedInt"/>

<xs:element name="delimiter" type="xs:byte"/>

</xs:schema>

## X.2 Example of FDT

[new example]

<?xml version="1.0" encoding="UTF-8"?>

<FDT-Instance

xmlns="urn:IETF:metadata:2022:FLUTE:FDT"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="urn:IETF:metadata:2022:FLUTE:FDT FLUTE-FDT-3GPP-Main.xsd"

Expires="331129600">

<File

Content-Type="application/sdp"

Content-Length="7543"

TOI="2"

FEC-OTI-FEC-Encoding-ID="1"

FEC-OTI-Maximum-Source-Block-Length="8192"

FEC-OTI-Encoding-Symbol-Length="16"

FEC-OTI-Scheme-Specific-Info="AAECCA=="

Content-Location=<http://www.example.com/fancy-session/main.sdp>>

<Cache-Control>

<Expires>331129630</Expires>

</Cache-Control>

<delimiter>0</delimiter>

</File>

<File

Content-Type="String"

Content-Length="161934"

TOI="3"

FEC-OTI-FEC-Encoding-ID="1"

FEC-OTI-Maximum-Source-Block-Length="8192"

FEC-OTI-Encoding-Symbol-Length="200"

FEC-OTI-Scheme-Specific-Info="AAECCA=="

Content-Location="http://www.example.com/fancy-session/trailer.3gp">

<delimiter>0</delimiter>

</File>

<schemaVersion>1</schemaVersion>

<delimiter>0</delimiter>

</FDT-Instance>

\*\*\*\* Last Change \*\*\*\*